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ABSTRACT

During the 1971-1972 school year, 808 pupils enrolled in fourth and fifth grade regular classes in 24 schools participated in the Talking Typewriter Program. The design of the program placed two classes at the instructional site every six weeks. After completion of the six-week phase of the program, these classes returned to their home schools and entered the 150 day follow-up phase of the program. The pupils received approximately fifteen minutes of instruction each day on the Talking Typewriter. Information was presented to the children audibly and visually, and the Talking Typewriters responded to the children, providing a constant flow of responses. A random sample of six schools was selected to evaluate the program. Some of the results indicated that on the basis of post-program reading vocabulary and reading comprehension scores better than one out of four pupils in the sample population narrowed the discrepancy between their performance levels and reading expectancies to 1.0 or less grade equivalent units. Average gain in comprehension grade equivalent units was 5 months in an average service period of 25.46 days. It was recommended that the Talking Typewriter Program continue. (WR)

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TALKING TYPEWRITER

TITLE I EVALUATION

1971-1972

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TALKING TYPEWRITER

I. INTRODUCTION

The Talking Typewriter Program has been operative in the Cleveland Public Schools as a strategy to improve the reading skills of identified fourth grade pupils in 12 Title I schools. A responsive and autotelic[1] environment augmented by selected materials, special teaching techniques, the expertise of trained staff and individualized tutoring form the core of a design geared toward the removal of reading frustrations which many children have faced throughout the primary grades.

A. Needs and Rationale

Authorities in the field of learning behaviors emphasize the recognition of individual learning modalities. Many pupils adjust to the core reading process and make satisfactory progress. There remain pupils whose learning modalities require a different approach which may not have been met as they moved through the grades. For the child who has not met success in the regular classroom with additional remediatory assistance, a change in the direction of the approach to reading deficiencies is indicated.

The Talking Typewriter offers an efficient educational strategy with a different learning environment. It combines structured materials geared toward mastery of behavioral objectives to promote changes in attitudes as well as positive changes in reading

[1] Moore, O. K., "Autotelic, Responsive Environments for Exceptional Children", in O. J. Harvey (Ed.) Experience, Structure, and Adaptability. New York. Springer Publishing Co., 1966. Pp. 169-216.

directions. It utilizes a response to visual and kinesthetic signals as one positive facet.

Critical numbers of individuals are unable to move into the mainstream of life with skills deemed necessary to employability. Poor reading skills have been identified as the crucial lack for those who remain unemployable. The child, identified as a reading failure at the end of the third grade, becomes a focal point of concern as a potential future dropout.

Metfessel and Seng project one useful grouping of the characteristics of a low achiever as "learning style" [2]. They state:

> Low achievers characteristically demonstrate a cognitive learning style that responds more to visual and kinesthetic signals than to oral or written stimuli.

Rationale for this program rests upon certain key factors demonstrated to be critical to optimal learning:

- establishment of a responsive environment
- utilization of multi-sensory techniques
- positive learning reinforcement through successful learning experiences
- self-pacing of instruction
- prescriptive teaching based on diagnostic data
- flexibility and versatility of teaching resources

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[2] Metfessel, Newton S. and Seng, Mark W. "Correlates With the School Success and Failure of Economically Disadvantaged Children". Reading for the Disadvantaged. International Reading Association. Harcourt Brace and World, Inc. New York, 1970. P. 76.

Generally, this program seeks to improve reading competencies of disadvantaged children in grade 4 in Cleveland Public Schools whose needs indicate a different approach.

Specifically, goals for the program include:

1. To improve the reading skill of pupils with serious reading disabilities in an effort to bring them up to an appropriate level for their reading expectancy which shall be determined by the Bond-Tinker formula.

   Two criteria will be considered indicative of appropriate functioning:

   a. Independent performance by the pupil in terms of using the materials in his regular classroom

   b. Achievement on standardized tests and inventories within appropriate level for reading expectancy as described in Chart 1.

2. Improvement of parental involvement and supportive efforts with reinforcement of the remediation process

3. Upgrading of teacher competency in the teaching of reading to the child with a reading handicap

4. Establishment of more positive rapport with the school community.

B. Historical Background

Current reading programs in Cleveland Schools have resulted in noteworthy gains for substantial numbers of children. It became apparent, however, that new instructional arrangements must be made for other children whose learning styles were not utilized to greatest advantage by present instructional procedures in language arts. New responsive learning environments were needed to facilitate mastery of the

language arts--notably reading.

The Talking Typewriter appeared to provide a new and intensive learning experience for groups of children in the fourth grade found deficient in reading skills. The multi-media, electronic device was a motivational factor. Its operation offered strengthening of the auditory, visual and tactile senses. Programmed reading materials reinforced by skilled reading teachers, were an integral part of the total teaching plan. The design of the Talking Typewriter program of the Cleveland Public Schools was reflective of accepted learning theories of recognized behavioral psychologists and psycho-linguists.

In May, 1969, the Talking Typewriter began. This Responsive Environmental Learning Center, located in the Supplementary Education Center, near downtown Cleveland, was within convenient distance for majority of inner-city schools. In its initial year, the program rendered service to 12 schools. Full implementation of the follow-up phase of the design has increased the number of classes served. The 1971-72 school year, saw 12 schools serviced at the installation site and 14 schools in the follow-up program.

C. Summary of Operations

The project operated under the supervision of the Educational Program Manager of the Reading Instruction Program assisted in part by one consultant who served as head teacher.

Delivery of instruction was the responsibility of three reading consultants. Their duties included testing and diagnosis, instructional planning, concept presentation, prescriptive teaching, individualization, consultation and remediation. Additional support in remediation efforts was given by tutors assigned to the project from the Resident Tutor Project under the supervision of the Talking Typewriter professional staff. The five Talking Typewriters were monitored and operated by three educational assistants. The staff and the educational assistants worked as a team to coordinate programming to meet the needs of individual children. A unique feature of the design was the inclusion of the classroom teacher who was trained by the Talking Typewriter staff and taught in the related classroom as part of the teaching team.

The evaluation focuses on operations during the 1971-72 school year. Total enrollment for the year was 808 pupils. Appendix I summarizes the enrollments for the project schools.

Project costs amounted to $94,735, which represented a per pupil expenditure of $117.24.

D. Questions To Be Answered By Evaluation

1. What improvement did participating pupils make in reading as indicated by changes from pre to post test scores?

2. Did the participating pupils improve their reading to a level appropriate to their reading expectancy?

3. What were the changes in reading behavior patterns and attitudes toward reading as observed by their teachers?

4. What improvement in reading was observed by parents of participating pupils?

5. How were prior Talking Typewriter pupils performing in reading in their current classes based upon their placements on city-wide tests?

II. HIGHLIGHTS OF FINDINGS

A. Summary of Key Findings

It should be recognized in interpreting results of this evaluation that participating children have exhibited low levels of reading mastery and failure through the greater portion of their school experience. Establishment of "fair" criteria for progress represents an exceedingly difficult task. A reading expectancy derived through use of the Bond-Tinker formula is considered an appropriate means for comparing individual assessment of gain. It attempts to provide individual goals rather than a group standard appraisal which each child must meet.

This evaluation addresses itself to specific questions. Its findings include:

1. What improvement did participating pupils make in reading as indicated by changes from pre to posttest scores?

   - Mean gain scores from pre and posttest gave evidence that pupils, who participated in the six-week intensive instruction phase of the program, achieved an average gain of five months in vocabulary and five months in comprehension.

   - Comparison of pre and post-test average scores in vocabulary and comprehension showed a significant increase in comprehension for all classes selected for the evaluation sample in the intensive instruction period. Five out of six classes achieved significant gains.

2. Did participating pupils improve their reading to a level appropriate to their reading expectancy?

   - Gains in reading performance were observable for three out of four pupils using a criteria of two months gain for one month of instruction. Average gain in grade equivalent units was five months in an average service period of 25.46 days. The gain achieved by four per cent of pupils in a six week period placed them within one year of reading expectancy.

3. What were the changes in reading behavior patterns and attitudes toward reading as observed by their teachers?

   . Teachers observed pupil attitudinal chages in self-concept, desire to share and a greater respect for the rights of others. They noted more motivation to read and increased ability to work in groups.

4. What improvement in reading was observed by parents of participating pupils?

   . Parents reflected overall approval of the program.

   . Parents noted self-promoted desire to read at home, improved understanding of what was read, better spelling and a more positive attitude toward school.

5. How did pupils who had completed the six week instruction phase perform after 150 days in their home school classroom?

   . Findings based upon a sample of pupils in four schools who had completed Phase I and Phase II of the program reflected a decrease in reading performance over a period of 150 days. The median gain for these pupils had been eight months in a six week period. Over the 150 day period, median gains were five months.

6. How were prior Talking Typewriter pupils performing in reading in their current classes based upon their standings on city-wide tests?

   . The average stanine placements of a sample of sixth graders who had been participants in the Talking Typewriter (180 day design) approached stanine four on vocabulary and comprehension tests. Stanine four is in the average band of performance.

B. Implications and Recommendations

Findings suggest:

. expected gain yield in reading can be achieved for pupils when the reading approach and materials are geared to individual pupil reading needs.

. parents are supportive of their child's reading efforts and will assist.

- teacher assistance to pupils is improved through training and participating with pupils in a new reading approach

- that reading support given identified pupils and classroom teachers will be reflected in classroom reading performances.

Suggested recommendations include:

- continuance of Talking Typewriter services to children who meet the program criteria

- a strong plan of concentrated support for the follow-up classroom program (Phase II) is needed.

III. PROJECT DESCRIPTION

A. Participant Characteristics

It was anticipated that approximately 420 pupils could be served for instructional periods of six weeks during the school year. Pupils in classes from 12 target Title I school would receive 15-20 minutes of computer-based instruction based upon Sullivan materials, followed by an extensive reinforcement period in the related classroom.

Pupils eligible for service would give evidence of one or more of the following:

- severe reading disability for grade
- multiple classroom problems which parallel reading skill deficiency such as poor attention span, poor motivation, maladjustment, poor self-concept, excessive absence, etc.
- lack of confidence in ability to learn to read
- history of school failure and limited success in mastering the language based subjects.

Talking Typewriter staff, and classroom teachers agreed that the participants selected:

- had a record of school failure as evidenced on cumulative records
- manifested personality problems as the result failure frustrations
- related poorly to the reading process
- ranked from one to three grades lower in comprehension and vocabulary skills based on standardized test scores
- showed records of poor attendance suspected to be related to inability to compete favorably within the classroom due to reading deficiencies
- would react favorably to a new approach in reading in which:

- prescriptive teaching techniques based on individual and small group need would be used by trained reading staff
- the classroom teacher would participate as part of the teaching team
- failure frustrations were controlled
- materials were closer to actual reading level
- peer competition factors were removed
- progress could be made at pupil's reading rate
- a new stimulus was provided for motivation
- a longer period of time was devoted to intensive remediation of reading needs.

During the 1971-72 school year, a total of 808 pupils enrolled in fourth and fifth grade regular classes of 24 schools were participants in the Talking Typewriter program. The design of the program placed two classes at the instructional site every six weeks. After completion of the six week phase of the program, these classes returned to their home schools and entered the 150 day follow-up phase of the program. Consultant services to the teacher and class were provided by one of the trained Talking Typewriter staff. Full implementation of the continuum necessitated continuous scheduling of classes into the site. A total of 53 pupils enrolled in the summer program are not included in the total count of 355 Phase I participants. A proportionate number are included at completion of the follow-up phase as it occurs during the data year.

The following table reflects the number of schools involved.

Table I

Schools Served by Talking Typewriter

1971-1972

Year	Schools	Pupils
September 1971-June 1972.....	Public Elementary.....23	752
Spetember 1971-June 1972.....	Parochial ..... 2 Elementary	56
	TOTAL.....24	808

The continuum plan places two schools in a pre-test phase, two schools at the instructional installation, six schools in follow-up and two schools in a post-test phase.

B. Project Operations

At the end of third grade, some children have experienced serious reading disability yielding a history of failure. The pleasure of reading success has eluded them as they have not been able to relate to the core reading process. The major thrust of this program is directed toward children in this category at grade four level.

Each Talking Typewriter is enclosed in a private booth where the pupil, completely alone, faces no competitive pressures, hears no distracting noises, proceeds at his own pace and suffers no embarressment if his reading level is low.

Five booths permitted a total of 20 children per hour utilization of the Talking Typewriters. Information was presented audibly and visually, with any desired sequence of letters, words and paragraphs. It responded to the student, providing a constant flow of responses, resulting in a continuous success-confidence building experience for the learner. The booths were monitored by a staff of trained aides who added a "comfort" factor.

Introduction and reinforcement of programmed concepts, with which the student would work in Talking Typewriter sessions, were taught by three reading consultants and the classroom teacher. In addition, the classroom teacher received "on-the-job" training in techniques geared to meeting individual reading needs. Small group and individual tutoring was accomplished by educational assistants and graduate student tutors from Resident Tutor Program. The supportive services of specialized personnel at Diagnostic Reading Clinic were available upon request.

Proper placement of pupils into the Sullivan materials was based upon results from administration of the Lorge-Thorndike Intelligence tests, Level 2, Metropolitan Primary II Reading Tests (1970) Form F and Sullivan Placement Tests.

Intelligence measures are considered only in that they result in approximation of the child's potential at the time of testing and are not considered conclusive of his inate abilities. Table 3, page 22, presents the range of P.L.R. results of pupils from a sample of six schools which received the services of the Talking Typewriter in 1971-72.

The Metropolitan Primary II Reading Tests were administered pre and post to establish the level of reading achievement. To insure that the intent and philosophy of the Behavioral Research Laboratories rationale was effected, the Bond-Tinker Reading Expectancy Formula was employed. Comparison of the child's reading scores against has reading expectancy projected the amount of reading gain achieved.

Six week attendance was recorded as an indicator of the sustaining motivational impact of the Talking Typewriters.

Staffing

This project operated under the guidance and supervision of the Educational Program Manager of the Reading Instruction Program assisted by one teacher-consultant. Three trained reading consultants, three educational assistants, one parent coordinator and a clerk completed the assigned staff at the installation. Children were transported to and from the Talking Typewriter site by minibus, utilizing the part-time services of two drivers. Specialized staff from the Diagnostic Clinic psychologists, nurse and social workers, provided part-time services upon request. Further efforts at individualization of remediation were given by tutors from Resident Tutor Program.

A unique feature of the instructional program was the inclusion of the classroom teacher as part of the teaching team. This person trained by the consultant-teachers received valuable experience as part of the team.

In-Service Training

In-service activities for the teachers and educational

aides at the installation were conducted by the Talking Typewriter professional staff, whenever the need arose. In addition, staff was involved in all in-service activites of the Reading Instruction program presenting experts in the field of reading.

Weekly staff meetings were scheduled to discuss plans and problems. These meetings provided the staff an excellent opportunity to correlate and build techniques for working with parents and interested community adults.

Parent Involvement

In line with program design, a parent observation meeting was scheduled during the span of time the class was in attendance at the site. A total of 14 group meetings were held for parents, at the site involving 87 parents.

Advisory Committee

The Talking Typewriter Parent Advisory Committee is part of the larger Parent Advisory Committee for the Reading Instruction Project.

IV. EVALUATION

A. Basic Design

The nature of the Talking Typewriter evaluation design did not lend itself to the use of an experimental-control design for evaluation purposes. An individual-vs.-self assessment was employed. A reading expectancy was used to determine pupil progress toward a performance level relevant to the particular pupil's strengths. The design involved a 2 x 3 time span assessment over a 180 day instructional period. It is considered that an appropriate level for upper elementary and secondary school

pupils will be within acceptable limits of within one year of reading expectancy. Each child will serve as his own control. Another aspect of appropriate functioning by pupils was adequate classroom performance as observed by the classroom teacher. Parents were asked to submit their opinions of their child's improvement as judged by their observations of reading performance outside the classroom.

The evaluation centered on these key questions:

1. What improvement did participating pupils made in reading as indicated by changes from pre- to post-test scores?

2. Did the participating pupils improve their reading to a level appropriate to their reading expectancy?

3. What were the changes in reading behavior patterns and attitudes toward reading as observed by their teachers?

4. What improvement in reading was observed by parents of participating pupils?

5. How were prior Talking Typewriter pupils performing in reading in their current classes based upon their placements on city-wide tests?

Results and Analysis of Findings

A random sample of six schools was selected for evaluation purposes. These schools were representative of the six week design of the program which operated at the Talking Typewriter installation and the classroom follow-up. Data from a population sample of 155 pupils in grade four formed the basis for findings related to phase I. Follow-up data were drawn from obtained scores of 76 pupils in grade five involved in the follow-up classroom program during the 1971-72 school year and

will be referred to as Phase II, in this evaluation.

The Metropolitan Primary II Reading Tests, Forms F, G, and H and the Lorge-Thorndike Intelligence Test, Level 2, were administered to all participants as instruments of pre and post measurement. Classes in the 1971-72 follow-up (Phase II) post-tested on the Gates-MacGinitie, Survey D. Information gained from the results of testing in addition to teacher and parent assessment of pupil progress was used to provide answers to questions posed in this evaluation. The evaluation plan is presented in Chart I.

1. What improvement did participating pupils make in reading as indicated by changes from pre to post-test scores?

Observation of mean gain scores from pre and post testing with the Metropolitan Reading Tests, Forms F and G gave evidence that Phase I classes achieved an average gain of five months in comprehension and five months in vocabulary after six weeks of intensive instruction. Table 2 presents the findings.

The rationale of the Talking Typewriter programmed materials proposes a two year gain for one year of instruction. This is equivalent to a proportionate gain of two months for one month of instruction. The 1971-72 sample achieved an average gain of five months for one month of instruction. At the time of entry into the program, the average stanine placement for pupils in six schools was 3.7 in vocabulary and 3.3 in comprehension. At the end of six weeks of instruction in Phase I, the standings of the sample schools were stanine 4.3 in vocabulary and 3.8 in comprehension.

T statistics between observed means of standard scores in vocabulary and comprehension, pre and post, were computed as one means of determining the extent to which gains made may be

CHART I

PLAN FOR EVALUATION

TALKING TYPEWRITER PROGRAM

Objective	Data Collection	Data Analysis	Criterion
1. To improve reading skill of pupils with serious reading disabilities in an effort to bring them up to an appropriate level for their reading expectancy which shall be determined by the Bond-Tinker formula.	Pre-post administration of Metropolitan Reading Test, Primary II or Elementary, Forms F, and G, in addition to follow-up administration of Form H upon completion of classroom service period. Pre-program administration of Lorge-Thorndike Intelligence Scale, Primary Battery, Level 2 Pupil Rating Sheet	$O^1 \times O^2$ $O^1 \quad O^2$ (ex post facto control group) Analysis of co-variance	Achievement on standardized tests within at least a half-year of pupil's reading expectancy level--which is to be achieved by at least four out of ten pupils receiving full services. Independent functioning by four out of ten pupils receiving full service with regular classroom reading materials at least half of the time.
2. To improve parental involvement and support in remediation of pupils' reading disabilities.	Program records Prental Questionnaire	Descriptive report	Contact will be made with at least 90 per cent of the parents of participating pupils; at least 75 per cent will report improvement in their children's reading performance.

considered significant.

TABLE 2

Metropolitan Reading Tests Forms F and G
1971-1972

School	VOCABULARY Pre	Stanine	Post	Stanine	COMPREHENSION Pre	Stanine	Post	Stanine
1	3.4	4	4.6	5	2.8	3	3.3	4
2	3.6	4	3.0	4	2.0	3	2.4	3
3	3.7	4	4.8	5	3.0	4	3.6	4
4	2.7	3	3.2	4	2.3	3	2.7	3
5	2.5	3	2.9	3	2.0	3	2.3	3
6	2.3	3	2.7	3	1.7	2	2.3	3
Average	3.0	4	3.5	4	2.3	3	2.8	3
Average Gain			.5				.5	

Significant t's were evident for 83 per cent of the sample classes in vocabulary and 100 per cent in comprehension. Table 3 presents the t distribution.

The average child enters fourth grade at age nine. Children selected for instruction at the Talking Typewriter were determined to be those who have experienced repeated failures through school due to severe reading deficiencies. It is recognized that these pupils are generally over-age by the time that they reach the fourth grade. In the evaluation sample it was found that ages of pupils ranged from 8-9 to 11-7 years. Appendix II lists the range of ages with their comparative medians. Median age for the sample of 155 pupils in the Phase I

TABLE 3

LEVELS OF SIGNIFICANCE* FOR OBSERVED MEANS OF SCORES - METROPOLITAN READING TESTS

TALKING TYPEWRITER - GRADE 4 PRE FORM F, POST FORM G

School	N	Vocabulary Pre Form F	Vocabulary Post Form G	t ($p \leq .05$)	Comprehension Pre Form F	Comprehension Post Form G	t ($p \leq .05$)
1	27	58.41	65.78	3.41 s.	55.27	60.27	4.24 s.
2	27	58.94	54.00	-2.60 n.s.	45.44	49.59	3.33 s.
3	27	60.37	67.52	3.60 s.	57.15	62.74	2.97 s.
4	26	51.35	55.73	5.17 s.	48.81	53.54	2.36 s.
5	27	48.48	52.93	5.05 s.	44.56	49.33	3.17 s.
6	21	45.76	50.86	3.24 s.	39.19	43.62	3.64 s.

*Levels of significance for one-tailed test
s. - significant
n.s. - not significant
Means of standard scores

program was 10-2 years.

Excessive age for grade suggests that such pupils will evidence large differences between their reading scores and reading expectancies. This becomes a critical handicap which must be overcome in the process of remediation before real gain can be observed.

Intelligence measures form only one basis of consideration when assessing the progress of the individual pupil. These measures are interpreted as the approximate level of functioning of the pupil at the point in time of testing. It is recognized that many extraneous variables are operative which may have an indirect bearing on pupil performance. Proper assessment of growth in reading requires inclusion of some measure of intelligence. The Lorge-Thorndike, Level 2 was chosen as appropriate. Results demonstrate that the range of intelligence for the evaluation sample was 64-114. The median intelligence score was 85.83. IQ results are presented in Table 4.

TABLE 4

RESULTS BASED UPON ADMINISTRATION OF THE LORGE-THORNDIKE INTELLIGENCE TEST

School	Enrollment	Range	Median
1	27	78-108	90.21
2	27	76-103	84.50
3	27	65-107	86.69
4	26	62-107	83.88
5	27	69-113	90.75
6	21	77-113	80.50
TOTAL	155	62-113	86.08

The above information illustrates the wide range of ability of the classes being served by the Talking Typewriter program. Pupils were selected for participation because they reflected critically deficient reading skills. It was the intent of the program to serve children in the below average range of ability. The needs of this type of population require constant re-examination of progress and developmental processes. Their learning problems necessitate stringent individualization.

Attendance data was assessed to observe the impact of motivation as a factor in achieved reading gain. It was determined that during an average service period of 25.46 days, the sample of the 6 schools showed an average grade equivalent

gain of five months in vocabulary and five months in comprehension. Table 5 illustrates the grade equivalent units by schools.

TABLE 5

AVERAGE SERVICE PERIOD BY SCHOOLS

School	N	Average Grade Equivalent Gain in Months		Phase I Average Service Period
		Vocabulary	Comprehension	
1	27	12	5	28.30
2	36	4	4	25.91
3	29	11	6	24.37
4	27	5	4	23.53
5	28	4	3	26.17
6	23	4	6	24.47
TOTAL	170	53*	47*	25.46

*Converted to grade equivalent units, the average gains are 5.3 and 4.7.

The second matter of concern was:

. Did the participating pupils improve their reading to a level appropriate to their reading expectancy?

This evaluation was concerned with the change between the pupil's reading expectancy and functioning level in reading. The Bond-Tinker formula for reading expectancy was used to establish an optimum level for each pupil through individualization of a standard for assessing the pupil's progress. The formula is the product of the pupil's years in school, his scholastic performance as indicated by a deviation IQ score obtained from the Lorge-Thorndike Intelligence Test plus one

e.g. - years in school x $\frac{IQ\ score}{100}$ + 1.0 This procedure of comparison of pre and post-program standings for each pupil in relation to their expectancy was considered more appropriate as a guide to assess the extent to which the rationale of self-competition was achieved.

The "appropriate level of functioning" was set according to the classification system delineated by Wilson which prescribes tolerable discrepancy scores in relation to grade levels[1]. An average of these (.8 for the fourth grade, 1.0 for the fifth and 1.2 for the sixth grade levels) produces an average discrepancy score of 1.0 which was applied in this evaluation. It was considered that pupils performing within a year of their expectancies would be at an appropriate level and would not be considered disabled.

Results indicated that on the basis of post-program reading vocabulary and reading comprehension reading scores better than one out of four pupils in the sample population narrowed the discrepancy between their performance levels and reading expectancies to 1.0 or less grade equivalent units. Average gain in comprehension grade equivalent units was 5 grade equivalent units in an average service period of 25.46 days. Graphic presentation of these findings is located in figure 1, Appendix V.

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[1] Wilson, Donald B., Diagnostic and Remedial Reading, Columbus, Ohio. Charles E. Merril Books, Inc. 1967

Inspection of Appendix V reveals that 99 per cent of the participants in Phase 1 began their program at the Talking Typewriter with a level of -1.1 years and more below their reading expectancies. It should be considered that the formula is a gross screening tool which does not pinpoint "specific" skill deficiencies. These must be determined through diagnostic procedures and the resultant instructional design individualized to permit each child to work toward his individual goal of improvement. The variables of excessive age and wide-ranged intelligence, as presented, should be considered. Approximately 4 per cent of the pupils improved their reading performance levels to within one year and beyond their reading expectancies within a six week period. Approximately 72 per cent of pupils achieved gains of from two months to 18 months in the six weeks of Talking Typewriter instruction. Chart II presents the findings.

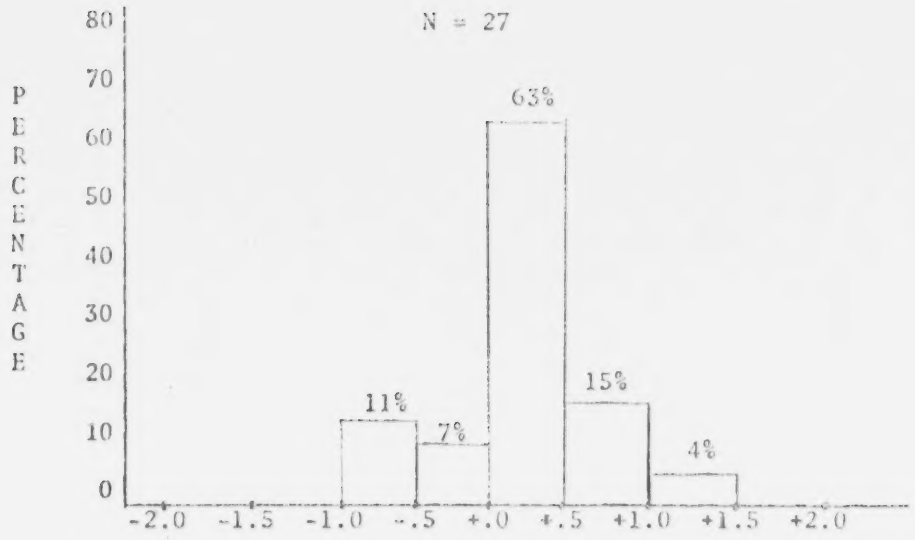
Phase II

Upon completion of Phase I (six weeks intensive instruction at the Talking Typewriter installation), classes continued the program in their home schools for a period of 150 days. Assistance to these classes and their teachers was given from the Talking Typewriter professional staff. During the 1971-72 school year, 14 schools completed the 180 day design and were phased out of the program. Data are presented in this section of the evaluation are pertinent to a sample of four schools randomly selected from this group of schools. A sample population of 76 pupils was involved in the follow-up study. For purposes of validity,

CHART II

TALKING TYPEWRITER
Gains in Reading Performance Based on Change Scores

Phase 1



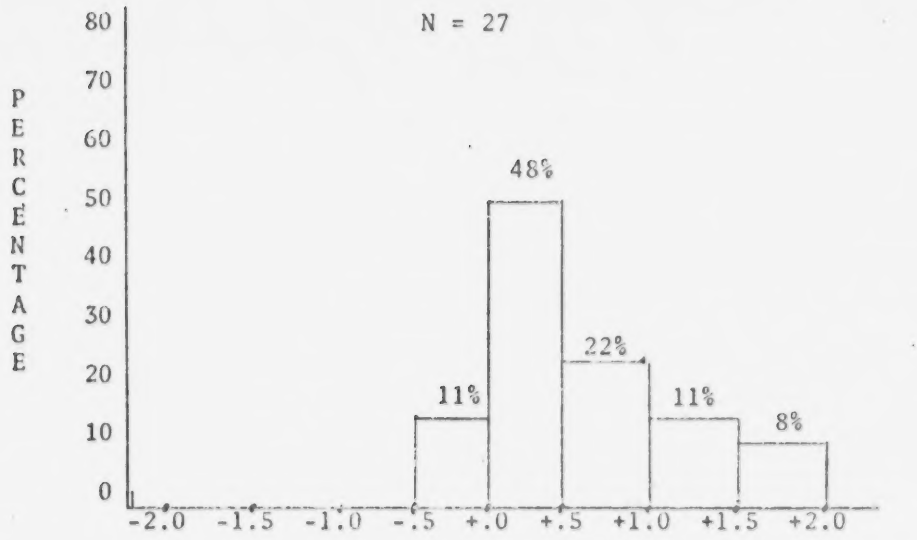
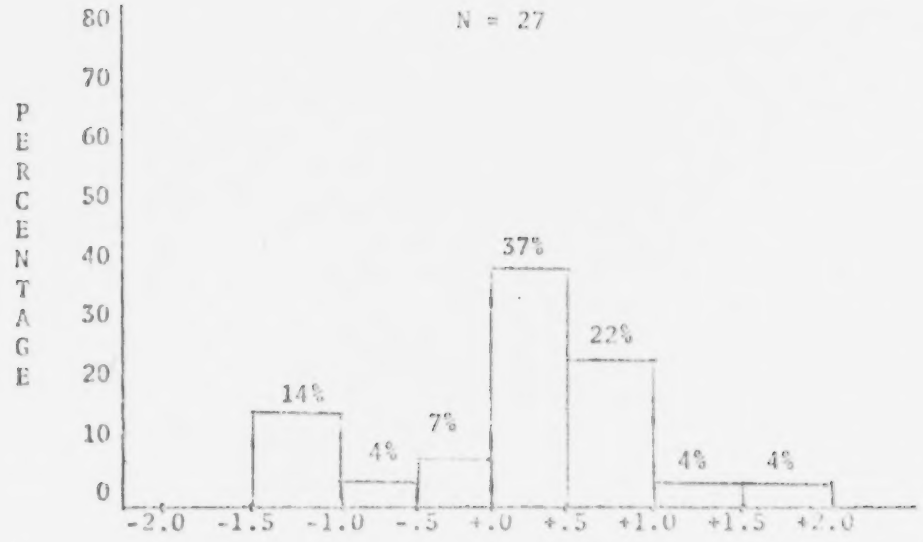


CHART II

TALKING TYPEWRITER
Gains in Reading Performance Based on Change Scores

Phase 1
(con't)



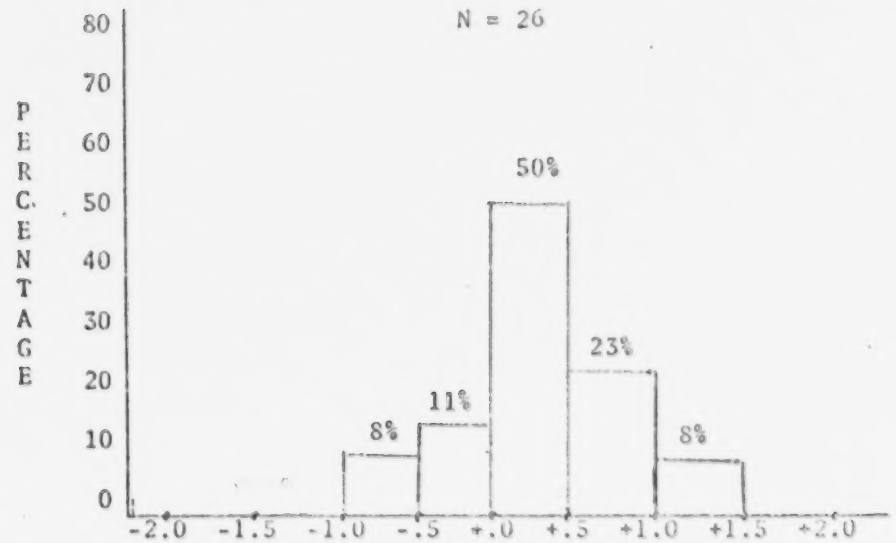
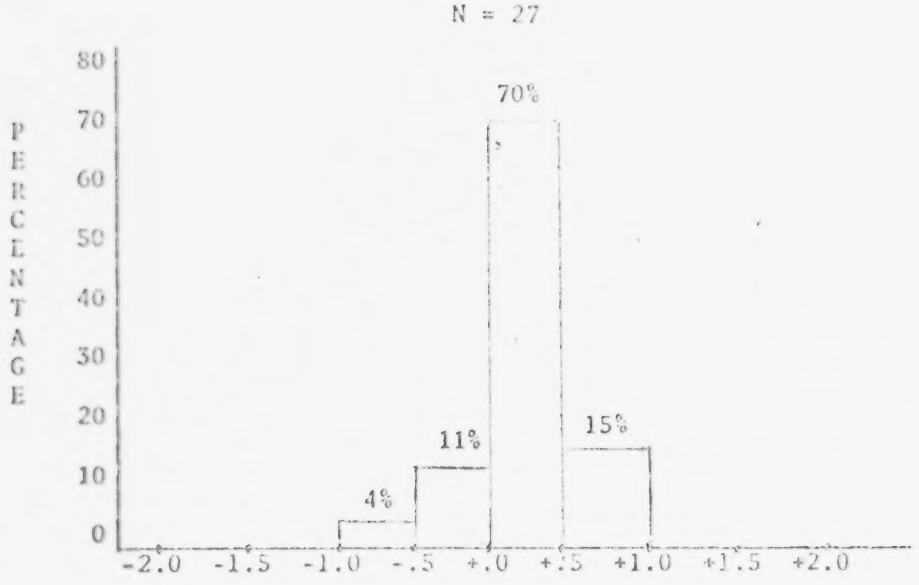
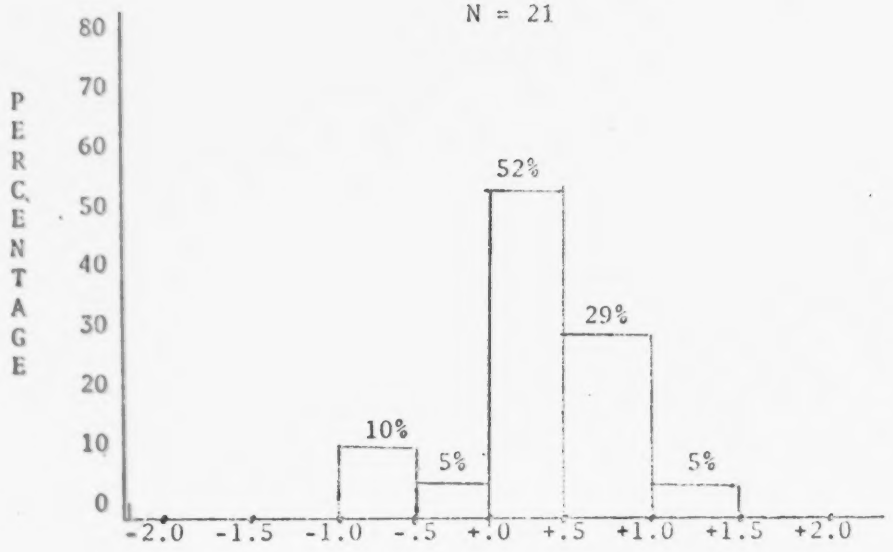


CHART 11

TALKING TYPEWRITER
Gains in Reading Performance based on Change Scores

Phase 1
(con't)





only those pupils who attended the six week phase and the classroom follow-up program are considered as having completed the 180 day design. Pupils in this sample were tested with the Gates-MacGinitie Survey D.

The sample population was typical of that presented in preceding study of Phase 1. The median age of the group upon entry was 11-4 and median IQ, 85. This supports the premise that participants exemplified the characteristics of excessive age and wide range of intelligence typical of other pupils with reading deficiencies. Table 6 illustrates the findings.

TABLE 6

MEDIAN AGE AND INTELLIGENCE RESULTS

OF PUPILS IN FOLLOW-UP CLASSES

AT END OF PHASE II

School	Enrollment*	Age		Intelligence	
		Range	Median	Range	Median
1	24	9-11 to 12-2	11-2	71-104	87.12
2	12	11-0 to 12-1	11-6	73-104	78.91
3	17	10-10 to 12-5	11-9	75-109	90.35
4	23	9-11 to 12-4	11-1	68-106	85.35
TOTAL	80	9-11 to 12-5	11-5	68-109	85.43

It was evident that both Phase I and Phase II pupils were typical of the heterogeneity of pupils within classroom by age and intelligence.

Average gains from reading scores were based upon results obtained from the administration of Gates-MacGinitie Read-

ing test, Form D. Observed means of standard scores are presented in Appendix III. Average grade equivalent scores and stanine standings are presented in Appendix IV. Comparison of grade equivalent scores with grade level norms may be found in Appendix VI.

Obtained scores on Form D placed those classes in stanine standings of 2-3, which were below average. The median gain of eight months achieved in the six week Phase I program had regressed to five months at the end of the 150 day classroom follow-up.

Reading expectancies, adjusted for span of time, were utilized to reflect the degree to which the rationale of self-competition was observable at the end of the 180 day design. Comparisons of each pupil's attained score in comprehension and his reading expectancy demonstrated progress toward an individual goal of achievement. It was determined that 13 per cent of the participants came within one year of their reading expectancies which was considered an appropriate level of functioning without being considered disabled. None of the sample population were beyond the criterion level of within one year at the end of the 180 day period. It may be interpreted that a regression of reading gains occurred during the classroom follow-up period. This pattern of regression was observed in the 1970-71 evaluation. In an attempt to offset the observed regression effect the project plans to implement the training of a classroom aide along with the teacher to provide additional support for pupils. Principals were requested to lend support through careful selection of the teacher. The project continues emphasis on teacher selection as strength, creativity and flexibility are necessary teacher ingredients for pupil success.

Thirdly:

What improvement did pupils reflect in functioning with materials in their classroom?

It was deemed pertinent to survey teachers who were participating in the Talking Typewriter program for the first time. It was observed that eight of the 12 Talking Typewriter teachers were new to this reading approach. The results of opinionnaires received from these teachers reported evidences of:

- improved independent study habits
- more interest in reading
- increased competence in word attack skills
- better understanding of contextual reading.

Outgrowths of these improvements provided visible answers to the fourth question:

What were the changes in reading behaviors and attitudes toward school as observed by teachers?

Teachers saw:

- better self-concept
- more reading motivation
- greater respect for the rights of others
- increased ability to work in groups
- desire to share

As an added dimension, teachers were asked to briefly list five ways in which they felt this approach met the reading needs of pupils in their classes.

In summary, teachers listed:

- individualized instruction
- individualized attention to child's reading problem
- improved reading ability
- successful experience for the child
- improved word-attack skills
- better spelling
- wider range of vocabulary
- varied activities to suit short attention spans
- immediate reinforcement of concept presented
- encouraged mastery of basic sight words
- opportunity to work at own level and pace
- improved comprehension.

The opinions of principals were sampled to determine their reactions to program impact for selected pupils in their buildings. The sample of 12 schools included schools in which classes had recently completed the six week phase and the follow-up phase. Nine of the schools had classes which had completed the six week component, two had classes in the follow-up phase and one class had recently completed the 180 day design. It was of interest to note the number of times the school had participated in the program since its inception in 1969.

Number of Schools	Times Participated
6	1
3	2
1	4

Based upon communications with pupils and the Talking Typewriter classroom teacher, principals viewed the strengths of the program as:

- a different media for motivation, reading instruction approach and materials
- varied instructional skills from master teachers
- individualized reading approach for pupils
- an opportunity for pupils to work at their own pace with assistance when needed
- success and confidence-building for pupils in reading
- an aid to comprehension.

Recommendations included:

- completion of program during the school year
- teacher-stimulation after completion of the program at the installation
- some motivational machine for the classroom
- strengthened enrichment program for pupils whose accelerated progress due to program participation causes them to complete the program in a shorter span of time
- assist teacher in establishing with pupils behavioral objectives to be accomplished throughout the program.

The reactions of parents sought through questionnaire revealed an overall unanimous approval of the program. Parents expressed their appreciation of the homework booklet and stated that they checked it over with their child. Their interest was further reflected in the ways in which they assisted their child at home.

Summaries of parent opinionnaires from four schools are included in Appendix VIII. Copies of principal and teacher opinionnaires are in Appendix IX.

Observer Team

An added dimension of evaluation came from the input of neutral observers. The team, composed of a national reading consultant, a supervisor of Title I reading programs in a public school system within the state and a local principal of a Title I Cleveland school. The team visited the installation site on February 7, 1972 and a follow-up classroom on April 24, 1972. The report submitted by the Title I supervisor is included in the evaluation in summarization of team opinions. Recommendations were presented and discussed with the Educational Program Manager, Directing Supervisor of Research and a research evaluator in a debriefing session for project consideration. Suggested materials were forwarded to the Educational Program Manager by the team members. Copies of orientation materials and the observation instrument designed by the Reading Instruction Program may be found in Appendix X.

Remarks on Observation
of the
Talking Typewriter Program

Cleveland does not need any "one-day expert" evaluators. There is value, however, in an objective, practical opinion from visitors who also "struggle" in the area to be observed. It is in this light that I make the following comments:

Observed Strengths

1. Well trained, competent and industrious staff, both professionals and paraprofessionals.

2. An educational plan which includes:

   a. a simultaneous in-service training of the teacher with her class.

   b. a follow through service when the children leave after six (6) weeks.

3. A synchonized correctional learning project utilizing the Talking Typewriter Program with correlated programmed materials (Sullivan).

4. Planned individualized aid to all children needing one to one assistance reviewing and discussing the materials (one of the objectives).

5. Recognition that inadequate visual perception in some children may be blocking the decoding process and a planned program to overcome such deficiencies.

6. A good, concentrated, "shot in the arm" for selected fourth graders. The motivational factors provided by the "Talking Typewriter" itself and inspirational teaching could very well be the spark starting many children on the road to successful independent reading.

7. The students are grouped by approximate skill level. Lessons appear to be planned and progress is recorded.

8. All parents are invited to the center and given a complete program orientation.

A fifth question for which an answer was sought was:

How were prior Talking Typewriter participants performing in reading in their current classes based upon results from city-wide testing?

A sample of 65 pupils from the six schools which participated in the 180 day design in 1970-71 were located in sixth grade classes of their schools. It was determined that at the time of administration of the CTBS city-wide testing, the average stanine placements of the six prior program classes stood at stanine four in vocabulary and comprehension. It can be concluded from this finding that pupils in these classes had maintained themselves in the average stanine band for this particular test. It may be interpreted from this finding that the training and assistance which these pupils received through the Talking Typewriter had a sustaining impact on their after program performance.

V. CONCLUSIONS AND RECOMMENDATIONS

The Talking Typewriter Program of the Cleveland Public Schools has demonstrated that through utilization of a different approach to reading instruction the needs of the seriously disabled reader can be met. It is recommended that the Talking Typewriter program continue.

The project might wish to explore the following recommendations drawn from implications of the 1971-72 findings:

- continue selection of participants according to program criteria to insure that services are extended to those pupils whose needs are reading definitive
- review the classroom follow-up program to determine ways of providing greater assistance to classroom teachers
- establish regularly scheduled continuing in-service periods for classroom follow-up teachers that they may continue to grow in teaching techniques related to classroom problems
- continue its efforts at parent involvement at the site and at the participating schools

APPENDIX

APPENDIX I

PUPIL ENROLLMENT*

TALKING TYPEWRITER

PHASE I

	School	Date of Enrollment	Enrollment
1.	Bolton	September, 1971	28
2.	Longwood	September, 1971	32
3.	Hicks	October, 1971	34
4.	Tremont	October, 1971	27
5.	John W. Raper	December, 1971	38
6.	Crispus Attucks	December, 1971	23
7.	Mary Bethune	January, 1972	36
8.	Saint Agatha	January, 1972	30
9.	Dunham	March, 1972	27
10.	John D. Rockefeller	March, 1972	29
11.	Charles Orr	May, 1972	24
12.	Margaret Ireland	May, 1972	27
		TOTAL	355

*At entry

APPENDIX I (cont'd)

PUPIL ENROLLMENT

TALKING TYPEWRITER

PHASE II*

	School	Completion Date	Enrollment
1.	Charles Orr	September, 1971	33
2.	John Raper	September, 1971	31
3.	St. Aloysius	October, 1971	26
4.	Oliver W. Holmes	October, 1971	31
5.	Hazeldell	November, 1971	29
6.	Joseph Landis	November, 1971	31
7.	Tremont	January, 1972	22
8.	Chesterfield	January, 1972	34
9.	Washington Irving	March, 1972	29
10.	Dunham	March, 1972	25
11.	George W. Carver	April, 1972	29
12.	Giddings	April, 1972	21
13.	Bolton	June, 1972	25
14.	Longwood	June, 1972	26
		TOTAL	392

*Includes pupils added to class who did not attend Talking Typewriter Phase I yet participated in follow-up program. Project mobility eight per cent.

APPENDIX II

MEDIAN AGE BY SCHOOL*

PHASE I

1971-1972

School	Enrollment	Age Range	Median Age
1	27	8-11 to 10-7	9-8
2	27	9-0 to 10-9	9-6
3	27	8-11 to 11-3	10-2
4	26	9-2 to 11-5	10-2
5	27	9-3 to 11-2	10-4
6	21	9-1 to 11-3	10-2
TOTAL	155	8-11 to 11-5	10-1

*Refers to schools included in evaluation sample upon completion of Phase I.

APPENDIX III

OBSERVED MEANS OF STANDARD SCORES

GATES-MACGINITIE READING TESTS - SURVEY D

GRADE 5

1971-1972

		VOCABULARY				COMPREHENSION			
School	N*	Post	Stanine	Post-Post	Stanine	Post	Stanine	Post-Post	Stanine
1	24	35.00	2	50.25	4	36.42	2	40.79	3
2	12	29.50	2	36.67	3	35.83	2	38.58	2
3	17	37.78	2	45.32	4	36.88	2	43.88	3
4	23	38.22	2	38.65	3	35.78	2	34.57	2
TOTAL	76	35.12	2.0	42.34	3.5	35.72	2.0	38.20	2.8

N* - Includes only pupils who participated in program through Phase I and II.

APPENDIX IV

AVERAGE GRADE EQUIVALENT SCORES AND STANINES - GATES MACGINITIE READING TEST

FORM D POSTTEST - GRADE FOUR
POST-POSTTEST - GRADE FIVE

1971-1972

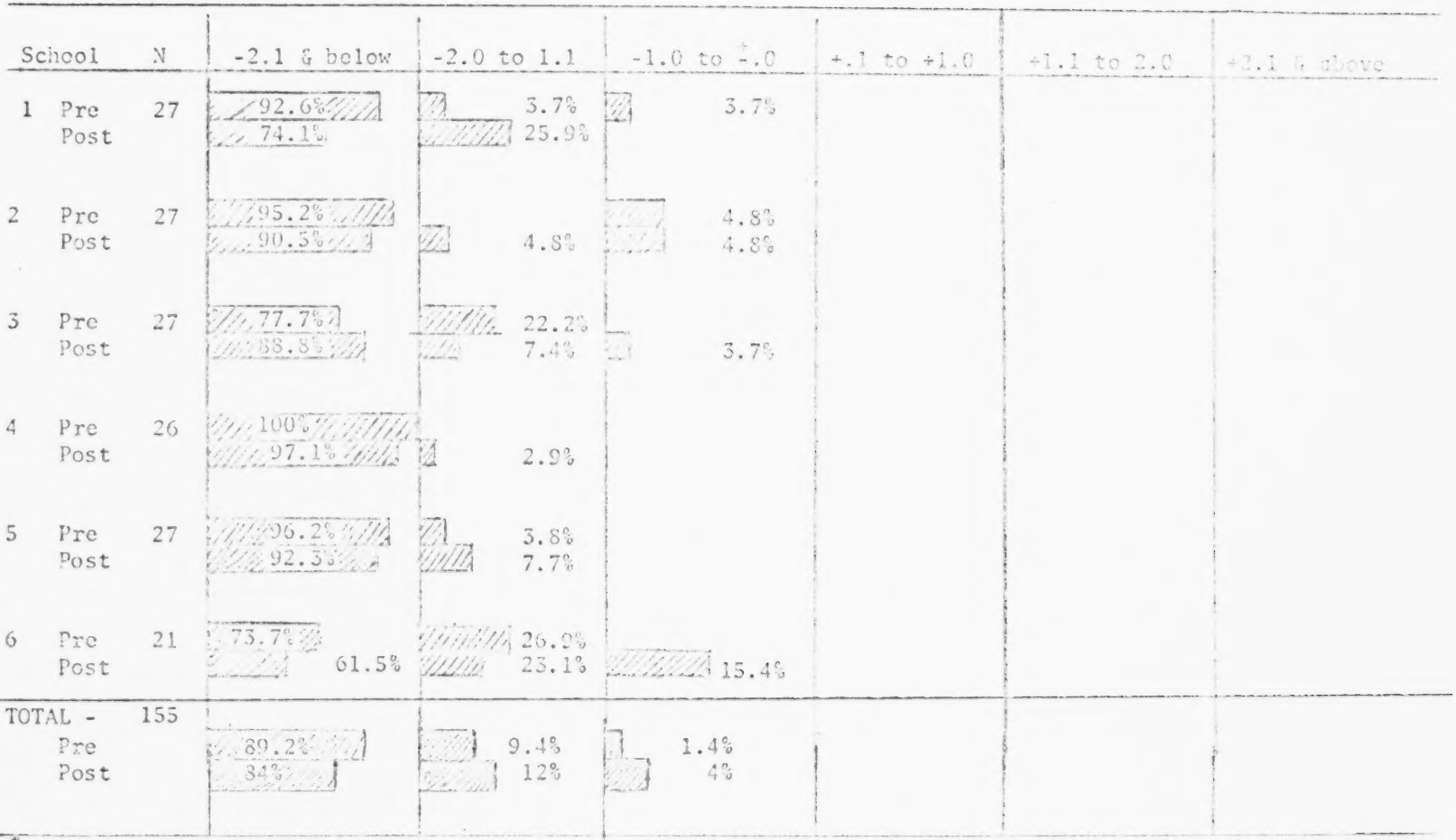
School	Norm at Point of Test	VOCABULARY				COMPREHENSION			
		Post Grade 4	Stanine	Post-Post Grade 5	Stanine	Post Grade 4	Stanine	Post-Post Grade 5	Stanine
1	4.7-5.5	2.0	2	3.8	4	3.7	2	3.9	3
2	4.7-5.5	2.7	2	3.4	3	2.5	2	3.0	2
3	4.7-5.5	3.2	2	4.4	4	3.3	2	4.0	4
4	4.7-5.5	3.2	2	3.9	3	3.2	2	2.9	2
AVERAGE		2.8	2.0	4.4	3.5	3.0	2.0	3.5	2.8

APPENDIX V

TALKING TYPEWRITER

Figure 1 - Differences Between Reading Expectancy and Performance Level 1971-1972

Phase I*



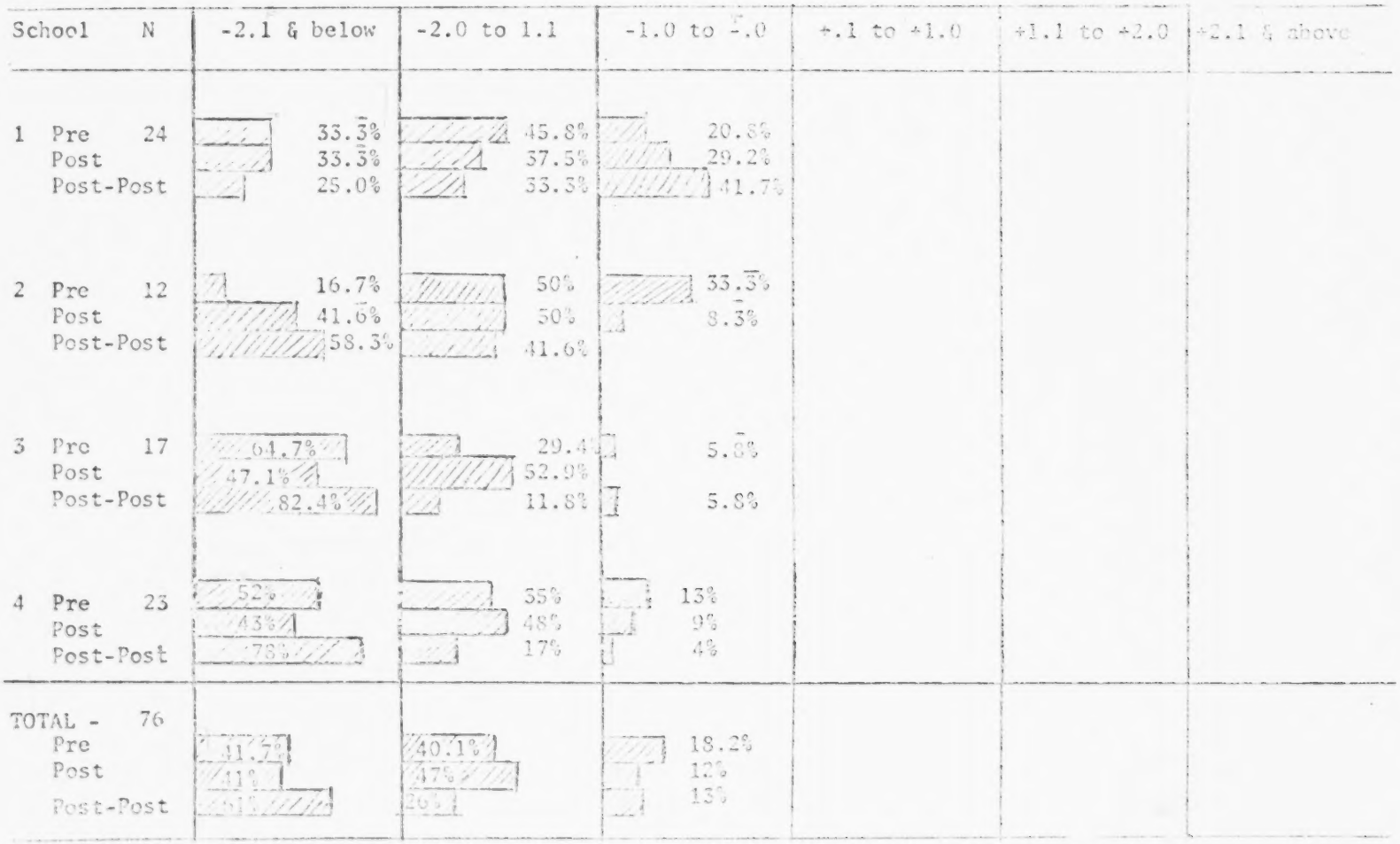
*Six week Phase Talking Typewriter Installation.

APPENDIX V

TALKING TYPEWRITER

Figure 2 - Differences Between Reading Expectancy and Performance Level 1971-1972

Phase II*



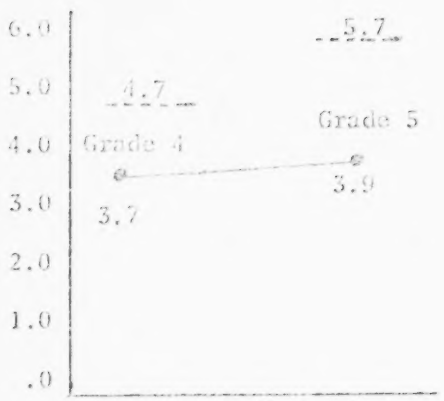
*Completed 180 day design (six weeks Talking Typewriter plus 130 days classroom follow-up).

APPENDIX VI

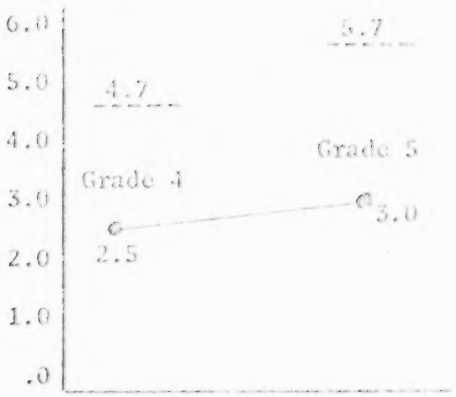
COMPARATIVE RELATIONSHIP BETWEEN GRADE EQUIVALENT SCORES AND TEST NORMS
COMPREHENSION SUBTESTS

GATES MACGINITIE READING TESTS - GRADE 4 and 5
Form D
1971-1972

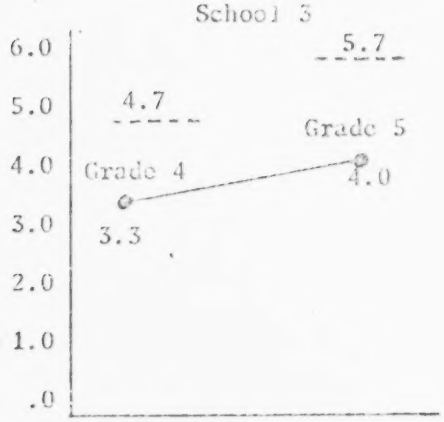
School 1



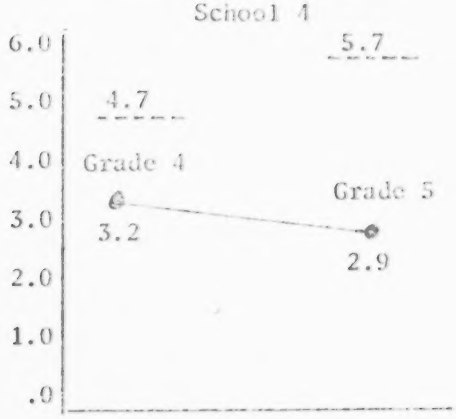
School 2



School 3



School 4



Grade equivalent score

Test norm

APPENDIX VII

Differences Between Reading Expectancies
and Performance
Talking Typewriter
Pre and Post Program
Phase I

1971-1972

No.	Dif. Pre	Dif. Post	Chg. Score	No.	Dif. Pre	Dif. Post	Chg. Score
1	-3.2	-2.9	0.3+	21.	-1.2	-2.0	0.8-
2	-2.1	-2.1	0.0	22.	-2.5	-2.3	0.2+
3	-3.1	-2.4	0.7+	23.	-2.3	-2.1	0.2+
4	-2.4	-2.1	0.3+	24.	-2.3	-1.5	0.8+
5	-3.2	-3.7	0.5-	25.	-0.9	-1.6	0.7-
6	-2.3	-1.8	0.5+	26.	-2.6	-2.4	0.2+
7	-3.5	-2.8	0.7+	27.	-2.7	-1.9	0.8+
8	-2.2	-1.8	0.4+	28.	-2.2	-2.0	0.2+
9	-3.0	-2.9	0.1+	29.	-2.4	-2.7	0.3-
10.	-3.5	-3.6	0.1-	30.	-3.2	-2.9	0.3+
11.	-3.1	-1.8	1.3+	31.	-5.3	-5.1	0.2+
12.	-4.6	-5.4	0.8-	32.	-5.4	-4.8	0.6+
13.	-5.1	-4.9	0.2+	33.	-4.4	-3.9	0.5+
14.	-3.2	-3.0	0.2+	34.	-4.9	-4.7	0.2+
15.	-3.6	-3.3	0.3+	35.	-3.4	-3.4	0.0
16.	-3.2	-3.1	0.1+	36.	-4.7	-4.1	0.6+
17.	-3.0	-2.6	0.4+	37.	-3.0	-3.4	0.4-
18.	-3.0	-2.8	0.2+	38.	-3.1	-2.8	0.3+
19.	-2.9	-2.4	0.5+	39.	-3.2	-2.8	0.4+
20.	-2.9	-2.5	0.4+	40.	-1.8	-2.9	1.1-

APPENDIX VII (con't)

Differences Between Reading Expectancies
and Performance
Talking Typewriter
Pre and Post Program
Phase I

1971-1972

No.	Dif. Pre	Dif. Post	Chg. Score	No.	Dif. Pre	Dif. Post	Chg. Score
41.	-2.7	-2.5	0.2+	61.	-3.5	-2.0	1.5+
42.	-2.7	-2.6	0.1+	62.	-2.0	-1.5	0.5+
43.	-2.9	-1.5	1.4+	63.	-3.4	-2.8	0.6+
44.	-3.0	-2.8	0.2+	64.	-4.3	-3.5	0.8+
45.	-3.1	-2.1	1.0+	65.	-3.4	-2.1	1.3+
46.	-4.1	-3.3	0.8+	66.	-3.4	-2.7	0.7+
47.	-3.9	-3.1	0.8+	67.	-4.2	-4.2	0.0
48.	-3.8	-3.1	0.7+	68.	-3.6	-3.4	0.2+
49.	-4.1	-2.4	1.7+	69.	-4.2	-3.3	0.9+
50.	-3.5	-2.7	0.8+	70.	-2.6	-2.7	0.1-
51.	-3.8	-3.4	0.4+	71.	-2.4	-2.6	0.2-
52.	-5.3	-5.2	0.1+	72.	-2.0	-3.2	1.2-
53.	-4.6	-3.2	1.4+	73.	-3.5	-0.5	3.0+
54.	-2.0	-3.0	1.0-	74.	-1.8	-3.0	1.2-
55.	-3.1	-3.0	0.1+	75.	-2.1	-3.2	1.1-
56.	-1.6	-2.7	1.1-	76.	-2.9	-2.4	0.5+
57.	-2.7	-3.3	0.6-	77.	-3.8	-3.2	0.6+
58.	-6.5	-5.8	0.7+	78.	-3.3	-2.9	0.4+
59.	-4.3	-3.3	1.0+	79.	-4.5	-4.1	0.4+
60.	-5.5	-5.0	0.5+	80.	-3.6	-3.2	0.4+

APPENDIX VII (con't)

Differences Between Reading Expectancies
and Performance
Talking Typewriter
Pre and Post Scores
Phase I

1971-1972

No.	Dif. Pre	Dif. Post	Chg. Score	No.	Dif. Pre	Dif. Post	Chg. Score
81.	-4.2	-3.9	0.3+	101.	-3.2	-2.8	0.4+
82.	-3.8	-3.2	0.6+	102.	-3.1	-2.5	0.6+
83.	-3.1	-3.0	0.1+	103.	-2.8	-2.6	0.2+
84.	-2.8	-2.6	0.2+	104.	-3.6	-3.0	0.6+
85.	-2.8	-2.1	0.7+	105.	-2.0	-1.7	0.3+
86.	-2.9	-2.3	0.6+	106.	-5.0	-5.7	0.7-
87.	-2.7	-2.0	0.7+	107.	-3.8	-4.2	0.4-
88.	-2.5	-2.3	0.2+	108.	-3.5	-3.8	0.3-
89.	-3.5	-3.3	0.2+	109.	-2.6	-2.4	0.2+
90.	-2.4	-2.3	0.1+	110.	-2.6	-2.0	0.6+
91.	-1.6	-1.8	0.2-	111.	-4.9	-4.1	0.8+
92.	-1.7	-1.7	0.0	112.	-3.5	-3.1	0.4+
93.	-1.9	-1.9	0.0	113.	-3.2	-2.7	0.5+
94.	-2.5	-2.5	0.0	114.	-2.1	-2.5	0.4+
95.	-2.1	-2.0	0.1+	115.	-3.2	-3.7	0.5+
96.	-1.7	-1.0	0.7+	116.	-4.1	-3.7	0.4+
97.	-2.0	-0.2	1.8+	117.	-4.6	-4.6	0.0
98.	-1.5	-1.0	0.5+	118.	-3.7	-3.5	0.2+
99.	-3.3	-3.4	0.1-	119.	-3.8	-3.3	0.5+
100.	-2.5	-0.8	1.7+	120.	-4.0	-4.6	0.6-

APPENDIX VII (con't)

Differences between Student Perceptions
and Teacher Ratings
Taking Chemistry
Pre and Post Course
Phase I

1971-1972

No.	Dif. Pre	Dif. Post	Chg. Score	No.	Dif. Pre	Dif. Post	Chg. Score
121.	-3.1	-2.6	0.5+	141.	-3.9	-3.0	0.9+
122.	-4.0	-3.9	0.1+	142.	-4.9	-4.0	0.9+
123.	-3.6	-3.7	0.1-	143.	-4.6	-3.2	1.4+
124.	-3.3	-2.6	0.7+	144.	-3.5	-2.9	0.6+
125.	-4.5	-4.0	0.5+	145.	-2.2	-2.9	0.7-
126.	-3.5	-3.2	0.3+	146.	-3.3	-3.1	0.2+
127.	-4.6	-4.2	0.4+	147.	-5.1	-4.9	0.2+
128.	-3.7	-3.1	0.6+	148.	-4.0	-3.7	0.3+
129.	-3.2	-3.0	0.2+	149.	-3.8	-3.3	0.5+
130.	-3.3	-3.4	0.1-	150.	-4.0	-4.2	0.2-
131.	-3.5	-3.3	0.2+	151.	-0.4	-1.0	0.6-
132.	-3.5	-3.3	0.2+	152.	-5.0	-4.7	0.3+
133.	-3.1	-2.7	0.4+	153.	-3.0	-2.8	0.2+
134.	-3.1	-2.8	0.3+	154.	-4.2	-3.4	0.8+
135.	-3.2	-3.0	0.2+	155.	-3.2	-2.5	0.7+
136.	-4.4	-4.2	0.2+				
137.	-2.9	-2.7	0.2+				
138.	-3.3	-3.2	0.1+				
139.	-5.4	-4.3	0.1+				
140.	-4.2	-3.5	0.7+				

APPENDIX VII (con't)

Differences Between Reading Expectancies
and Performance
Talking Typewriter
Pre, Post, and Post-Post Program

1971-1972

No.	Dif. Pre	Dif. Post	Dif. Post-Post	Pre-Post Chg. Score	Post-Post Chg. Score
1.	-4.5	-2.4	-2.6	2.1+	0.2-
2.	-1.5	-1.9	-2.3	0.4-	0.4-
3.	-1.6	-1.8	-2.3	0.2-	0.5-
4.	-4.7	-4.8	-5.1	0.1-	1.7+
5.	-1.7	-1.2	-1.6	0.5+	0.4-
6.	-3.1	-3.1	-3.5	0.0	0.4-
7.	-1.4	-1.2	-1.8	0.2+	0.6-
8.	-1.7	-1.5	-2.1	0.2+	0.6-
9.	-1.7	-1.0	-1.9	0.7+	0.9-
10.	-1.4	-1.5	-1.9	0.1-	0.4-
11.	-2.7	-2.5	-3.3	0.2+	0.8-
12.	-1.8	-2.2	-1.4	0.4-	0.8+
13.	-1.9	-1.3	-1.6	0.6+	0.3-
14.	-1.6	-1.7	-1.8	0.1-	0.1-
15.	-1.6	-1.7	-1.7	0.1-	0.0
16.	-2.6	-2.7	-3.1	0.1-	0.4-
17.	-3.7	-3.4	-3.3	0.3+	0.1+
18.	-1.6	-1.4	-0.6	0.2+	0.8+
19.	-2.4	-2.3	-2.1	0.1+	0.2+
20.	-1.6	-1.8	-1.4	0.2-	0.4+

APPENDIX VII (con't)

Differences Between Reading Expectancies
and Performance
Talking Typewriter
Pre, Post, and Post-Post Program

1971-1972

No.	Dif. Pre	Dif. Post	Dif. Post-Post	Pre-Post Chg. Score	Post-Post Chg. Score
21.	-2.4	-2.1	-0.6	0.3+	1.5+
22.	-2.5	-2.9	-3.1	0.4-	0.2-
23.	-2.8	-2.8	-2.0	0.0	0.8+
24.	-0.4	+0.0	-0.6	0.4+	0.6+
25.	-1.9	-2.1	-1.8	0.2-	0.3+
26.	-1.3	-1.4	-0.1	0.1-	1.3+
27.	-0.3	-0.5	-1.1	0.8+	0.6+
28.	-1.9	-1.4	-1.5	0.5+	0.1-
29.	-3.7	-3.8	-4.1	0.1-	0.3-
30.	-2.0	-1.0	-0.7	1.0+	1.7+
31.	-1.5	-1.1	-0.6	0.4+	1.7+
32.	-0.9	-0.3	-0.7	0.6+	1.0+
33.	-0.7	-0.8	-0.3	0.1-	1.1+
34.	-1.1	-0.8	-0.9	0.3+	0.1-
35.	-0.1	-0.1	-0.7	0.0	0.6-
36.	-2.7	-1.8	-2.3	0.9+	0.5-
37.	-2.0	-1.3	-3.7	0.7+	2.4-
38.	-2.1	-2.8	-2.2	0.7-	0.6+
39.	-3.4	-1.2	-3.7	2.2+	2.5-
40.	-2.7	-2.5	-4.3	0.2+	1.8-

APPENDIX VII (con't)

Differences between Reading Expectancies
and Performance
Tell'em Typewriting
Pre, Post, and Post-Post Program

1971-1972

No.	Dif. Pre	Dif. Post	Dif. Post-Post	Pre-Post Exp. Score	Post-Post Exp. Score
41.	-3.3	-3.3	-3.1	0.0	0.2+
42.	-2.4	-2.3	-3.3	0.1+	1.0-
43.	-2.2	-2.0	-2.1	0.2+	0.1-
44.	-1.5	-1.6	-2.4	0.1-	0.8-
45.	-0.7	-1.9	-1.5	1.2-	0.4+
46.	-3.2	-3.5	-4.2	0.3-	0.7-
47.	-2.6	-3.0	-4.1	0.4-	1.1-
48.	-2.5	-2.3	-3.1	0.2+	0.8-
49.	-2.0	-3.0	-3.1	1.0-	0.1-
50.	-1.7	-1.2	-2.8	0.5+	1.6-
51.	-3.7	-1.7	-3.4	2.0+	1.7-
52.	-2.4	-1.5	-1.0	0.9+	0.5+
53.	-1.1	-1.1	-1.9	0.0	0.8-
54.	-2.4	-2.3	-2.8	0.1+	0.5
55.	-1.7	-1.8	-2.4	0.1-	0.6-
56.	-1.9	-2.0	-2.3	0.1-	0.3-
57.	-2.5	-4.9	-2.5	2.4-	2.4+
58.	-1.9	-1.1	-2.6	0.8+	1.5-
59.	-2.3	-2.0	-3.0	0.3+	1.0-
60.	-0.7	-1.3	-2.1	0.6-	0.8-

APPENDIX VII (con't)

Differences Between Reading Expectancies
and Performance
within Treatment
Pre, Post, and Post-Post Program

1971-1972

No.	Dif. Pre	Dif. Post	Dif. Post-Post	Pre-Post Chg. Score	Post-Post Chg. Score
61.	-2.3	-1.9	-2.8	0.4+	0.5-
62.	-1.7	-1.9	-2.4	0.2-	0.5-
63.	-2.3	-1.9	-2.4	0.4+	0.9-
64.	-2.7	-2.4	-2.5	0.3+	0.1-
65.	-2.6	-2.5	-3.0	0.1+	0.5-
66.	-4.7	-2.6	-2.8	2.1+	0.2-
67.	-4.9	-2.8	-3.2	2.1+	0.4-
68.	-2.2	-2.1	-2.8	0.1+	0.7-
69.	-3.6	-3.7	-2.2	0.1-	1.5+
70.	-1.8	-1.7	-1.6	0.1+	0.1+
71.	-0.8	-0.8	-1.8	0.0	1.0-
72.	-1.5	-1.6	-1.7	0.1-	0.1-
73.	-1.2	-1.4	-1.9	0.2-	0.5-
74.	-0.9	-0.3	-1.0	0.6+	0.7-
75.	-1.6	-4.0	-2.3	2.4-	1.7+
76.	-2.4	-2.2	-3.1	0.2+	0.9-

N= 12

APPENDIX VIII

Talking Typewriter - Parent Opinionnaire

I Method of learning of child's participation in program

Note	Teacher	Telephone call	Type of homework
42%	17%	8%	8%

II Did you have opportunity to observe child at Talking Typewriter Class?

Yes	No
17%	75%

Why didn't you attend

1. Out of town
2. Working
3. Small baby
4. accident

III. Your feeling concerning program

1. Very impressed
2. Step in right direction
3. Very thrilled by modern methods of education and the results achieved.

IV. Specialized services child received

1. Special testing at Jane Addams Annex
2. Contact with special nurse
3. Contact with social worker

What did child tell you test was like

1. "Involved blocks"
2. "Talk to typewriter and it tells you what you said and you must read it"
3. She said, "I learned words on a screen, and a man spoke and taught me the difference in words and the sounds and I typed them out."

V. Strong points of program

1. Child receives more individual attention
2. Program instills confidence in child which in turn makes him feel that he can improve his reading skills and does.
3. Program improves his ability to spell
4. Program improves his knowledge of phonics
5. The novelty of this approach to reading intrigues the child and inspires him to continue in his efforts to learn to read.
6. Because of child's feeling of accomplishment and success, his dislike for school disappears. He now is anxious to attend school

VI. Suggestions for improvement of program

1. Longer period of participation for each child involved
2. Excellent as is (2)

VII. Assistance given by mother while child was in program

1. Helped child to understand content of what he was reading
2. Assisted child in pronouncing difficult words
3. Listened to child read orally
4. Assisted child with homework booklet
5. Procured a book on phonics to help me assist child in this category

A. Reaction to work booklet

1. Very helpful
2. Built up confidence in child in himself and his ability to achieve

VIII. Changes noticed in child while enrolled in program

1. Attitude toward school

Much	Some	None
42%	25%	8%

2. Attitude toward reading

Much	Some	None
50%	25%	8%

3. Interest in reading

Much	Some	None
58%	25%	8%

4. Ability to understand what he is reading

Much	Some	None
50%	25%	8%

IX. Changes in child's reading habits

1. For first time child really enjoyed reading at school and now reads on her own volition at home
2. Showed much improvement in ability to pronounce old and new words
3. Improvement in reading speed very noticeable
4. Improvement in spelling ability
5. Improvement in ability to comprehend content and to relate what had been read

X. General Comments

1. Period of participation in program much too short
2. Incorporate this program into regular curriculum so that every child can profit by it

N=4

APPENDIX VIII (con't)

Talking Typewriter - Parent Opinionaire

I. Method of learning of child's participation in program

Note 75% Teacher Telephone call Type of homework 25%

II. Did you have opportunity to observe child at Talking Typewriter Class?

Yes 25% No 75%

Why didn't you attend?

1. Working
2. Unable to make it
3. Illness

III. Your feeling concerning program

1. Very impressed
2. Very thrilled by modern methods, liked to learn much more about the program

IV. Specialized services child received.

1. Contact with special nurse

What did child tell you test was like.

1. Was interesting and helpful
2. Enjoyed it very much, typing words and then seeing the words on the screen

V. Strong points of program

1. Teaches the child to identify words by means of number and pictures
2. Improves his ability to read and spell
3. More individual attention

VI. Suggestions for improvement of program

1. Excellent way to help children improve their reading skills

VII. Assistance given by mother while child was in program

1. Assisted child in pronouncing difficult words
2. Listened to child read orally

A- Reaction to work booklet

1. Very helpful
2. Enabled child to show parent what he understood
3. Parent was able to see his improvement

VIII. Changes noticed in child while enrolled in program.

1. Attitude toward school

Much	Some	None
75%	25%	

2. Attitude toward reading

Much	Some	None
25%	75%	

3. Interest in reading

Much	Some	None
100%		

4. Ability to understand what he is reading.

Much	Some	None
100%		

IX. Changes in childs reading habits

1. Improvement in reading noticeable
2. Improvement in ability to comprehend content and relate what what he has read.
3. For the first time child enjoyed reading, read on his own volition at home.
4. Showed much improvement in ability to pronounce words.

X. General Comments

1. Thankful for the program, considered it very good.

N=20

APPENDIX VIII (con't)

Talking Typewriter - Parent Opinionnaire

I. Method of learning of child's participation in program.

Note	Teacher	Child	Type of homework
50%	5%	50%	50%

II. Did you have opportunity to observe child at Talking Typewriter Class?

Yes	No
50%	45%

Why didn't you attend

1. Illness
2. Working
3. Medical appointment
4. Small children at home

III. Your feelings concerning program

1. Very impressed by modern methods of education and results achieved
2. Step in right direction
3. Thrilled with modern equipment
4. Impressed with qualified supervision

IV. Specialized services child received

1. Special testing at Jane Addams Annex
2. Contact with the special nurse
3. Contact by letter
4. Contact with the social worker
5. Special home visit
6. Contacted by telephone

What did child tell you test was like.

1. Like a reading test
2. Seeing words on screen and then identifying them
3 "Involved blocks," matching pictures with words.

V. Strong points of program.

1. Child receives more individual attention
2. Program improves his reading skills.
3. The novelty of this approach to reading intrigues the child and inspires him to continue in his efforts to learn to read.
4. Program instills confidence in child which in turn makes him feel that he can improve his reading skills and does.
5. Held the child's interest, his dislike of school disappears.

VI. Suggestions for improvement of program

1. The program should be extended to all grades
2. Continuation of program
3. Longer period of participation for each child involved
4. Excellent as is

VII. Assistance given by mother while child was in program

1. Helped child in pronouncing difficult words, then use words in sentences
2. Helped child to understand content what he read
3. Assisted child with homework by having him read orally and then explain what he read
4. Procured additional reading material and had child read aloud.

Reaction to work booklet

1. Very helpful
2. Build confidence in child in himself and ability to achieve
3. Very informative

VIII. Changes noticed in child while enrolled in program

1. Attitude toward school

Much	Some	None
10%	45%	25%

2. Attitude toward reading

Much	Some	None
35%	30%	20%

3. Interest in reading

Much	Some	None
40%	45%	5%

4. Ability to understand what he is reading

Much	Some	None
35%	45%	5%

IX. Changes in child's reading habits

1. For the first time the child really likes to read
2. He takes his time now to pronounce words and speaks more clearly
3. Improvement in spelling ability
4. Improvement in ability to comprehend content and relate what had been read
5. Improvement in reading speed noticeable

X. General Comments

1. Hope for continuation of program
2. Incorporate this program into regular curriculum so that every child can profit by it.
3. "I thought the project was a good one, but was very surprised that child had no book or homework projects to work on at home, since some parents work and are unable to make the sessions. I'm sure they would be willing to help the child at home. I don't feel I was well informed on what project was about, or how it was progressing to date, so I really don't know if I helped the child quit a bit or not at all. We need a little closer relationship between home and school."
4. Believe the program made a definite change in the child.

N=16

APPENDIX VIII (con't)

Talking Typewriter - Parent Opinionnaire

I. Method of learning of child's participation in program.

Note	Teacher	Telephone call	Type of homework
19%	25%	13%	13%

II. Did you have opportunity to observe child at Talking Typewriter Class?

Yes	No
44%	44%

Why didn't you attend

1. Illness
2. Younger children at home
3. Doctor's appointment
4. Working

III. Your feeling concerning program.
1. Very interesting
2. Happy child is in program
3. Should be helpful in children's learning

IV. Specialized services child received

1. Contact with special nurse
2. Received letter
3. Special testing at Jane Addams Annex

What did child tell you test was like.

1. Nothing
2. Liked it very much
3. Test was easy

V. Strong points of program

1. Program improved his knowledge of phonics
2. Program improved ability to spell
3. Teaches child to be self reliant
4. Child did so well, should have been in program long ago.
5. Improved his ability to understand what he is reading, and then be able to recognize words and able to spell them.

VI. What suggestions do you have for improving this project?

1. The possibility of help for the child that needs help in reading and writing.
2. Excellent as is.

VII. Assistance given by mother while child was in program.

1. Helped child with words
2. Assisted child with homework.
3. Assisted child with pronouncing difficult words.
4. Having child read simple books
5. Checked his work he brought home

Reaction to work booklet

1. Especially helpful, improved grades
2. Thought booklet nice
3. Good feeling to see child do his work correctly.
4. Assisted child to understand more about his work.

VIII Changes noticed in child while enrolled in program.

1. Attitude toward school

Much	Some	None
45%	38%	13%

2. Attitude toward reading

Much	Some	None
31%	50%	6%

3. Interest in reading

Much	Some	None
38%	50%	6%

4. Ability to understand what he is reading

Much	Some	None
44%	44%	

IX. What changes did you find in your child's reading habits

1. Seemed more interested and tried harder
2. Liked to read more
3. Shows more interest, and understands words he never did before
4. Reading improved, even plays school daily.
5. Able to read and write a little faster

X. General Comments.

1 Child liked program and it held his interest. Regrets she wasn't able to see program in action.

2. Very pleased as it helped the child very much.

APPENDIX IX

School _____ Date _____

CLEVELAND PUBLIC SCHOOLS
TALKING TYPEWRITER PROJECT

OPINION SURVEY

This survey is intended to sample opinions of principals in those buildings the Talking Typewriter program is in operation.

Please check the box which tells whether your class:

☐ has recently completed the six week design

☐ has completed the 150 day follow-up program

How many times have classes from your school participated in the Talking Typewriter program?

_____ time (s)

1. What do you consider the strengths of the Talking Typewriter program?

2. Which of these strengths did you consider of most benefit to students in your school?

3. What elements should be improved?

4. Please list any reactions from the follow-up teacher or students that you feel would strengthen our service?

5. What recommendations would you make for improvement of the program?

Division of Research
and Development
1971-72

CLEVELAND BOARD OF EDUCATION

Division of Research & Development

Date _____

Talking Typewriter Teacher Questionnaire

1. How many times have you participated in the Talking Typewriter Program as a teacher?

   1. ____ 2. ____ 3. ____ 4. ____

2. Briefly list 5 ways in which you feel this approach met the reading needs of pupils in your class.

   a.

   b.

   c.

   d.

   e.

3. Should you wish to make any further comments regarding the use of this questionnaire or anything else, please use the space.

Please return this form to Juanita Logan, room 610, Cleveland Board of Education in the enclosed envelope. Thank you.

APPENDIX X

OBSERVATION GUIDE

School _____ Date _____

Principal _____

Reading Consultant _____

Criteria	Observed	Not Observed
I. Room Atmosphere		
A. Attractive		
B. Stimulating		
C. Evidence of being a learning laboratory		
II. Teacher - Pupil Relationship		
A. Pupils show respect for themselves and others		
B. Pupils are actively involved in the learning situation		
C. Teacher shows respect for opinions of pupils		
III. Organization of the Program		
A. Evidence of organized teaching plan		
B. Pupils show knowledge of group procedures		
C. Use of materials		
1. Materials prepared and readily available		
2. Appropriate audio-visual aids used		
3. Variety of stimulating visual aids used		
4. Evidence of appropriate use of teacher-made and commercial devices		
5. Materials geared toward individualization		
IV. Teacher-Aide		
A. Aide shows by activity an awareness of classroom organization		
B. Aide knows and does her part to assist learning process		
C. Aide is skilled in drill procedures in small groups		
D. Aide is skilled in the operation of audio-visual equipment		

TALKING TYPEWRITER

OBJECTIVE:

Generally, this program seeks to improve reading competencies of disadvantaged pupils in grade four.

Specifically, the goal of the program is:

1. To improve the reading skill of pupils with serious reading disabilities in an effort to bring them up to an appropriate level for their reading expectancy which shall be determined by the Bond-Tinker formula.

CRITERIA FOR SELECTION OF PARTICIPANTS

Pupils selected for participation are currently in grade four. These pupils give evidence of:

- severe reading disability based upon the reading expectancy formula and results of third grade standardized reading measures;
- consistent reading failure (D, F and/or U grades) recorded on pupil record;
- slow progress through the grades
- history of school failure and limited success in mastering the language based subjects.

TREATMENT

Rationale for treatment in this program is demonstrated through:

- participation in a responsive learning environment
- utilization of multi-sensory techniques
- individualization of instruction
- positive learning reinforcement through successful experiences
- self-pacing of instruction
- prescriptive teaching based on diagnostic data
- flexibility and versatility of teaching resources.

THE TALKING TYPEWRITER

MODEL

The Talking Typewriter is a multi-media, fully synchronized computer-based learning system. Information is presented both audibly and visually with any sequence of letters, words and paragraphs. It responds to the student providing a constant flow of responses, resulting in continuous success, building the confidence of the learner.

Following each learning session, the student proceeds to the language arts classroom where his lesson is reviewed, discussed and correlated with the materials in use in the classroom.

Each student enters the system at his own skill level. As he progresses, diagnostic and progress checks prescribe proper study and reinforcement materials to optimize learning.

To assure support for the participant, the model includes the classroom teacher, educational aide, Talking Typewriter aides, tutors and parents as integral parts of the total program. Follow-up in the classroom continues with a coordinating consultant linking the classroom with the Talking Typewriter, providing guidance and further support to the classroom teacher and class.